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ject in this was to supersede the necessity of tacking, a purpose evidently not to be answered by it. In a dead calm the vessel is to be impelled by what he calls a *rame aspirante* (perhaps the oars invented by Barnoulli, to be drawn backwards and forwards under water). He proposes to build a vessel on this model 200 feet long, to carry 66 guns, and two thousand men, which, with victuals and stores for 50 days, would draw only 9½ feet of water. He supposes it would sail faster, and lie nearer the wind, than any vessel now in use. (No doubt it would sail fast going large, but it could not work well to windward.) It is to be rendered incapable of being sunk by means of copper airvessels, and a cork sheathing. Its design is to surprise an enemy's harbour.

On the processes employed to obliterate writing, methods of detecting frauds of this kind, the improvement of common ink, and a new ink that resists the action of chemical agents, by Dr. B. H. Tarry.

Writing is obliterated either by the application of some acid, or by scratching it out with a knife. Whenever the latter method is employed for a fraudulent purpose, as some other writing will be substituted, commonly pounce, or size, is applied to the paper, that the fresh ink may not run. In general close inspection with a good lens will show where writing has been scratched out, by the appearance of loose or ragged filaments. If pounce have been applied, spirit of wine will dissolve it, and wash it away; if size, immersion in warm water for a few minutes will have the same effect. After the application of either of these, the paper should be dried slowly; at first in the shade, till three parts dry, and afterwards between several sheets of paper, and while it is drying the ink last used, will spread and sink into the paper more or less. It may be remarked too, that the strokes of a pen will be more generally slender, where pounce has been applied, and more full, where size has been used, than in the other parts of the paper.

In some cases the original writing, that has been obliterated, may be made to reappear. If the whole of the iron that was in it be removed; this is impracticable. If it be not, infusion or decoction of galls will render it visible, in cases where nitric or oxymuriatic acid was employed to destroy it. The liquid prussiat of potash, or of lime, which is better, will restore letters obliterated by oxalic acid, or salt of sorrel, making them appear of a reddish brown. If oxymuriatic acid were used, it will render them visible, of a light greenish blue as long as the paper continues wet. If nitric or sulphuric acid were employed, the prussiat of lime will show this by tinging the paper blue, but it cannot restore the writing.

The hydroguretted sulphurets of the alkalis, or of the alkaline earths, will restore writing obliterated by the oxalic, oxymuriatic, or nitric acid, rendering it of a green black, brown red, or a pale rust colour. The sulphurets should be diluted with half or two thirds their quantity of water. When the action of the nitric acid has been so powerful, or so long continued, as to prevent the writing from being restored, sulphuretted hydrogen will produce wavy lines of a green black on the paper. When the nitric acid has been employed alone, and not to this extent, on holding the paper to the fire, the writing will reappear of a rust colour.

The goodness of ink depends on its containing the principles essential to its composition in due proportion, and the absence of those foreign to it.

The following are Dr. Tarry's directions for accomplishing these purposes.

In a wine quart of rain or river water, infuse four ounces, troy weight, of bruised galls, letting them stand in the sun four hours in summer, or six in winter. Strain off the liquor, and let it stand five or six months, occasionally removing the mother that forms on the top, and finally separating both this and the sediments by filtering through paper. In the filtered liquor dissolve a troy ounce of powdered gum arabic. After this is completely dissolved, add a troy ounce of sulphat of iron, commonly called green vitriol, which has been first calcined till it grows reddish, and finely powdered. Continue shaking the mixture, till the vitriol is entirely dissolved. Care must be taken in calcining the vitriol, which may very conveniently be done in an iron ladle, or in a fireshovel, that it is not brought to a full red, as in this state a great portion of it will be insoluble.

With regard to the composition of the indelible ink we are sorry to say, that Dr. Tarry has thought proper to keep it secret. He only informs us that it contains neither galls, nor logwood, nor brazil, nor gum, nor any preparation of iron; that it is entirely vegetable; and that it resists the action of the most powerful acids, of alkaline solutions in their most concentrated state, and of all solvents. He sells it in a solid form; and for use it is to be mixed accurately in a mortar with eight parts of water, and then put into a bottle, left at least one third empty for the purpose of shaking it, which is to be done every six or eight hours for a couple of days. It soon softens quills, but metallic pens are well adapted to it, as it contains no acid. It contains nothing deleterious. The action of nitric acid on it is very trifling. Oxymuriatic acid changes any thing written with it to the colour of goose dung; and often this caustic alkali renders it of a steel gray: but to produce these effects it must be steeped in them a long time, and the form of the letters then remains unchanged.

The ink has been examined by a committee of the French Institute, who confirm the report of Dr. Tarry with respect to its qualities; but they add, that it requires to be shaken every time it is used, as the colouring matter soon subsides to the bottom.

Account of a preservative Stucco, invented by the late Mr. Bachelier.

The speedy alteration of the stones employed in the principal buildings at Paris, and the inconveniences of renewing their surfaces from time to time by scraping them, induced Mr. Bachelier to propose to the superintendant of the royal buildings to make trial of a preservative stucco. In consequence, three pillars in the court of the Louvre were coated with this stucco to half their height, in 1755; and the parts coated remain in the highest preservation to the present day, being strikingly distinguished by their uniform tint, contrasted with the dull, grey, and earthly aspect of the contiguous parts.

As the alterations making in the Louvre would necessarily destroy every trace of this experiment, some of the members of the Institute conceived it a matter of importance, that an investigation of it as far as possible should take place before it was too late, and accordingly a committee was appointed for the purpose.

On enquiry it was found, that Mr. Bachelier had no where left any account of his process in writing; but his son gave the committee all the information he could from memory, having seen his father prepare it;